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PERSONNEL COSTS AS AN ELEMENT OF INVESTMENT IN REGIONAL HUMAN CAPITAL

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Abstract

Personnel costs as an element of investment in regional human capital.

Remuneration of labor is one of the most complex components of calculating the costs. On the one hand, the costs of labor, in the context of an enterprise, are a part of financial accounting that is governed by the Federal law. On the other hand, the costs of labor are closely connected with such category as human capital that needs to be addressed not just in the context of an enterprise, but at the regional level or even the state as well. Therefore, it is interesting to consider the structure of labor costs at the macro level, in comparison with such indicators as the number of enterprises and the number of the employed in the economy, the volume of sales, the total amount of expenses of the enterprises by sectors of activity, using the methods of time series analysis. The research was conducted in Ural, one of the biggest federal districts of Russian Federation. Urals Federal District includes four ares with highly developed industrial production as well as mineral resources extraction industry. The analyzed tendencies are presented as compared to the primary industrial sectors: agriculture, construction and commerce, all of which took leading positions when forming financial and economic figures of the region. Ural Federal Region is selected for the study, as it combines areas with different dominant types of activity, which allows to consider not only geographical, but also sectoral specificities.

Keywords: Human capital; personnel costs; the welfare of the region.

1. Introduction

The totality of costs associated with ensuring the optimal functioning of labor resources of an enterprise is directly related to human capital theory, widespread at the present stage. The "human

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capital" refers to a set of knowledge, skills and health condition of an employee that are used to meet the needs of a person and society, and are a source of future income. Human capital theory is closely connected with analytical issues of efficiency of investments in its reproduction, which should lead to an increase in future income of an employee, an enterprise and the state, as well as to bring public benefit (Smith, 2007).

The term "human capital" was first introduced by T. Schultz in the 1970s, who equated knowledge and skills of an individual to financial or physical capital, and prove that investments in education and health can bring in future more income than physical capital (Schultz, 1961). Later, the theory was developed by Becker (1964), who introduced the concept of general and specific human capital. General human capital is the knowledge of a universal nature, which has a specific value only within a particular enterprise or activity.

At the present stage of the concept development Goldin (2016), examines human capital from the viewpoint of the investment and result of the investments made. Holzer (2016), examines the category of human capital slightly wider than standard representations and elevates this issue to the level of government. It seems interesting to us to study American authors, who revealed positive dynamics of indicators of people's education and the average salary of the personnel as a whole (Prime et al., 2016). A number of authors address the issue of the indicator development of human capital at an enterprise (Kuhnen, & Oyer, 2016).

2. Problem Statement

Problems of calculation of costs and calculation of product costs, works and services are typical for all types of enterprises, because, on the one hand, the correctness of their formation affects the financial results, on the other hand, timely analysis of the structure and dynamics of costs improves the efficiency of current and strategic management, and, accordingly, prosperity of the region (Iurieva et al., 2013).

Table 1 shows brief characteristics mainly found in Russian enterprises of the types of personnel costs (Sinianskaia, 2014). This takes into account both the actual costs and the possible costs, related to the influence of internal or external factors (loss of benefit). Salary of the basic personnel and administrative managerial personnel is divided in the table into different categories, as in the calculation they are included as separate cost items. Direct costs are directly related to the production of certain commodities, but indirect costs are accounted for the overall period and then distributed. The basis for distribution of indirect costs among Russian companies is often the salary of production workers, which gives a special importance to this indicator.

Table 1. The classification of the main types of personnel costs and their characteristics.

List of costs	Feature costs taken into account in determining financial results
1. Costs related to the economic element of the "cost of labor"	
Salary of workers included in direct costs	Piece-rate pay based on individual and collective rates of hourly payment, according to tariff rates and salaries, allowances for work in conditions that differ from the standard, additional payment for combining different types of prizes.
Salary of managerial personnel in indirect costs	Remuneration of the managerial and subsidiary personnel of the general economic purpose, including all types of bonuses.

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Additional salary	Annual leave, compensation for unused vacation, payment grace days and hours for certain categories of employees.
2. Costs related to the economic element of the "social charges"	
Payments to state extra-budgetary funds	Payments assessed on salaries to the funds of pension, social and medical insurance, insurance against accidents and job related diseases, stipulated by the legislation on a mandatory basis.
3. Costs related to the item "other expenses"	
Recruitment and adaptation of personnel	The cost of labor market analysis, selection of candidates, initial adaptation in the team, reducing personnel turnover, the legal registration of labor relations.
Training and professional development of workers	The cost of training or improvement of skills at workplaces or at specialized educational institutions, quality assessment, and certification of personnel. Distraction from core activity and reduced productivity of workers sent for training or workers who conduct training others.
The cost of uniforms and required equipment and documentation	The cost of purchasing the necessary equipment, documentation and work clothes. The potential costs related to consequences of violation of the established standards (penalties of regulatory authorities).
Costs for labor protection	The cost of identifying regulatory requirements for safety in the workplace in accordance with legislation, provision of labor protection, regular medical examinations and annual physical examinations, measurements of the influence of harmful factors, certification of workplaces, elimination of the revealed deficiencies during certification. Possible compensation of harm, caused to life and health of employees through the fault of the enterprise.
Internal mobility	Travel and transport costs, attracting seasonal workers. If necessary, the cost of labor migrants.
Other social benefits (other than guaranteed by law)	Payments to private pension funds, supplementary insurance, medical service, sanatorium-and-spa treatment, payments for children in kindergartens, provision of housing.

The wage costs and social security payments, associated with the production process, depend on the quantity and quality of a production or on the executed works during a given period and are directly relevant to current accounting calculations. Most of the costs related to the item "other costs" are of an investment nature and are designed for the long term. The whole set of them reduces taxable income and, accordingly, requires economic justification. Enterprises need to establish their appropriateness to include them into production, administrative or selling costs. The financial and economic interests of the employer must not be in conflict with the social interests of the employees and must not contradict the current legislation in the field of labor law and social security.

Thus, most of the personnel costs, involved in the formation of the financial results of enterprises' activities, may also be considered in the context of investment in human capital. They are closely associated with the industry specifics of the region and, consequently, affect its well-being. The cost of labor among these indicators is the most significant and standard-setting factor, therefore, the further study will focus on identifying the connection between salary dynamics with the main indicators, characterizing the activities of economic entities.

3. Research Questions

At the regional level, a state or a union of states (macro-level) human capital embodies the accumulated costs on general education, health and labor movement. At the enterprise level (meso-level), special (corporate) human capital acts as a means of maintaining stability, enhancing the competitiveness

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of an enterprise in the long term. At the level of an individual employee (micro level), it expresses the dependence of a person's earnings and the costs of sustaining the family on personal inborn characteristics and characteristics acquired in the course of employment, as well as additional learning characteristics and qualities (Taylor, 1991).

Human capital theory is used in the justification of principles and objectives of management as a tool to improve the efficiency of personnel costs at the enterprise and regional level. A practical embodiment of the theory of human capital is connected to the expected positive results from investments in employees and revenue growth.

The study analyzes the dynamics of personnel costs of enterprises with different sectoral focus in order to characterize one of the qualitative indicators of investment in human capital in the region.

4. The Purpose of the Study

The complexity of labor costs analysis is due to two factors: on the one hand, salary is regulated by the Federal law, on the other hand, it is an element of accounting policy. As the cost of labor is closely associated with the category of "human capital", they should not be viewed simply in the context of the enterprise, but at the regional level. Therefore, it is interesting to consider the structure of costs of labor at the macro level in comparison with such indicators, as the number of enterprises and number of the employed in the economy, the volume of sales, the total amount of expenses of the enterprises by sectors of activity, using the methods of time series analysis. Ural Federal Region is selected for the study, as it combines areas with different dominant types of activity, which allows considering not only geographical, but also sectoral specificities.

5. Methods

The object of the study is presented by Ural Federal District (UFD).

Based on the analysis of time series, quite an objective situation of domination of the economically active population over the number of employees can be traced. The positive aspect is that the share of employment of the total active population in the whole Russia is large enough (in 2014, the smallest share was 88,84 % in North Caucasus District and the highest was 96,9 % in Central Federal District). In UFD, the figure is 94, 24 %, indicating a fairly high employment of citizens.

As a test region, Ural Federal District (UFD) is considered by regions in detail (table 2). In the Chelyabinsk region in pre-crisis 2007, the share of the economically active population almost equaled the number of employed citizens (97 %). A similar situation is observed in other regions of the Ural Federal District.

Table 2. The share of employed people of the total economically active population in UFD, %.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Kurgan oblast	87,57	88,57	87,78	91,50	90,73	86,81	87,87	90,02	91,33	92,47	92,97
Sverdlovsk oblast	92,74	93,22	92,98	94,80	95,19	91,78	91,59	92,75	94,18	94,10	93,93
Tumen oblast	91,44	93,30	93,09	94,11	93,34	93,22	93,14	94,20	94,81	95,29	95,34
Chelyabins oblast	94,91	94,73	94,88	97,47	95,73	91,97	92,52	93,40	93,60	93,96	93,76

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Along with employment, it is appropriate to analyze the unemployment rate in constituent entities of the Russian Federation, as a measure diametrically opposed to employment. It is a potential human capital of the country, which, due to social, economic and political situation, cannot be used by enterprises and constituent entities of the Russian Federation as a whole.

Figure 1 shows the rates of unemployment change in Ural Federal District. In Ural Federal District, the highest rate of growth in the number of the unemployed was in 2009 as compared to the previous year. A high growth rate of unemployment in Chelyabinsk oblast was also identified in 2008. The second place, by the growth of unemployment, is represented by Sverdlovsk oblast and it is followed by Kurgan oblast. In Tyumen oblast, the increase in the growth of an unemployment rate was observed in 2008, as compared with the previous year, and in 2009, there was a positive trend.

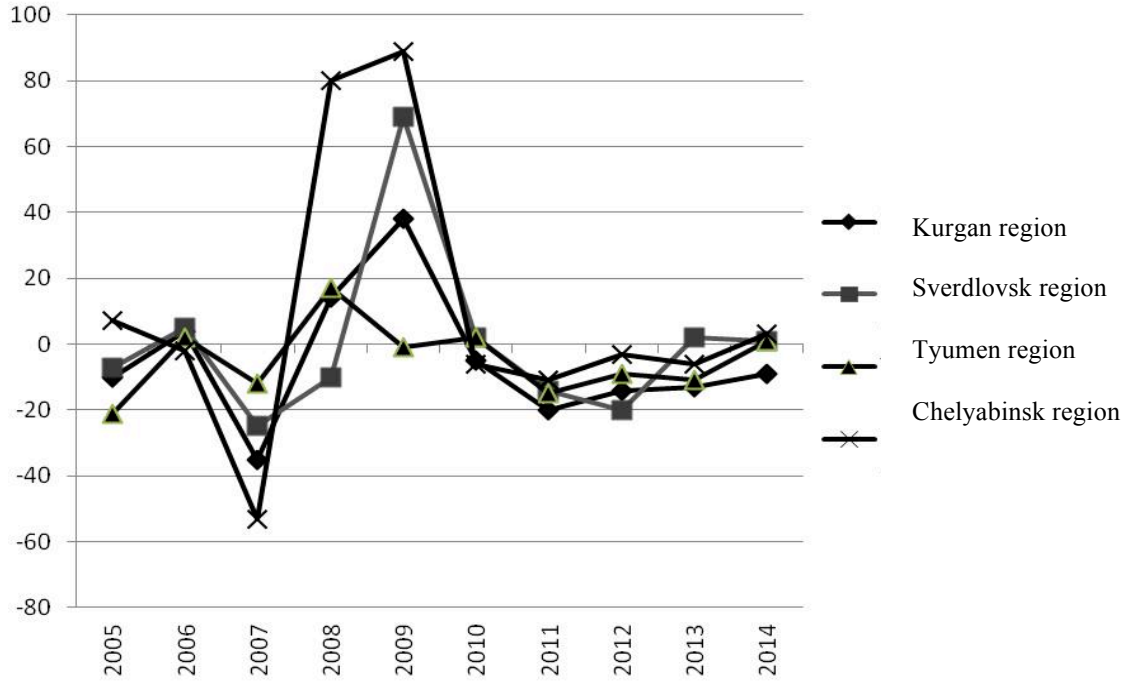

Fig. 1. The rate of unemployment change of the Ural Federal District subjects district, in %.

The economy of Sverdlovsk oblast is one of the largest among regions of the Russian Federation, according to the volume of gross regional product; in 2012, according to this indicator, Sverdlovsk oblast took the 5th place among other regions of the country. Sverdlovsk oblast is among the ten largest industrial regions, which accounted for about 50 % of total industrial production of the Russian Federation.

The largest part of the manufacturing sector of the regional economy is taken by manufacturing, which accounts for about 85 % of the total volume of shipped products of the industry in the region. The proof of this is that the share of enterprises in this sector in 2005 amounted up to 11,21 % of the total registered enterprises. Most of them belong to the manufacturing industry and enterprises (10,48 % of 11,21 %) (table 3). A distinctive feature of a sectoral structure of manufacturing is the high specific weight of metallurgical and machine-building sectors.

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In agriculture, the region focuses on the sustainable development of rural territories, as well as the development of the priority subsectors-crop and livestock production. But adverse climatic conditions, a high degree of depreciation of equipment, social and personnel problems influence the results. Thus, the share of enterprises in this sector is reduced from 3,65 % to 2,07 %, which means, rather, that agriculture is not a priority branch of the economy. It is interesting that despite the priority of the industry branch for the region, a large part among the total number of enterprises comprise trade organization. Although their share has been declining since 2009 and in comparison with 2005 (43,95 %), the figure reached a total of 38,98 % by 2013 (table 3). However, an increase of the number of enterprises engaged in other activities is observed after 2009, their share has risen since 2005 (33,47 %) by 2013 up to 39,52 %.

Table 3. The share of enterprises and organizations in the industry in the region.

	The share of enterprises in the industry in comparison with the total number of enterprises, in %									
years	agriculture, hunting and forestry	fishing, fish farming	mining	manufacturing	production and distribution of electric energy, gas and water	total industrial enterprises	construction	wholesale and retail trade	others	all businesses and organizations
2005	3,65	0,04	0,33	10,48	0,40	11,21	7,69	43,95	33,47	100
2006	3,34	0,05	0,33	8,85	0,47	9,65	8,11	44,33	34,52	100
2007	2,95	0,05	0,32	8,74	0,49	9,56	8,92	44,33	34,20	100
2008	2,72	0,05	0,32	8,42	0,47	9,21	9,45	44,67	33,90	100
2009	2,45	0,05	0,30	8,33	0,50	9,14	9,24	44,75	34,37	100
2010	2,51	0,06	0,32	8,25	0,57	9,14	9,60	43,53	35,16	100
2011	2,28	0,06	0,32	8,18	0,55	9,05	9,51	43,88	35,22	100
2012	2,28	0,06	0,33	8,42	0,59	9,35	9,52	41,73	37,06	100
2013	2,07	0,06	0,35	8,64	0,65	9,64	9,74	38,98	39,52	100

The population employed in the economy of the region tends to decrease in industry and agriculture. This may be due to the demographic situation in the country (due to fluctuations in birth rates, the number of university graduates may vary) or due to the decrease of attractiveness of the specialties of the agricultural sector. Although, if we compare this figure with the average salary, which increases by 2013, it is possible to make an assumption that a qualitative indicator of human capital of enterprises is growing. To reduce costs, companies are forced to reduce personnel or this reduction occurs to increase personnel motivation by increasing salary (table 4).

Table 4. Analysis of the average annual number of the employed in the economy of the region.

	Average number of people employed in the economy by types of economic activities					
	agriculture, hunting and forestry	mining	manufacturing	production and distribution of electricity, gas and water	construction	wholesale and retail trade

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years	The number, thousand people	Growth rate, %	The number, thousand people	Growth rate, %	The number, thousand people	Growth rate, %	The number, thousand people	Growth rate, %	The number, thousand people	Growth rate, %	The number, thousand people	Growth rate, %
2009	110,5	-	36,7	-	469,3	-	62,2	-	137,6	-	392,7	-
2010	108,2	-2,1	34,4	-6,3	467,9	-0,3	66,8	7,4	132,8	-3,5	399,7	1,8
2011	107	-1,1	34,1	-0,9	463,4	-1,0	66,8	0,0	127,7	-3,8	397	-0,7
2012	103,4	-3,4	34,5	1,2	459,7	-0,8	66,7	-0,1	127,3	-0,3	395	-0,5
2013	99,8	-3,5	34	-1,4	454,6	-1,1	66,6	-0,1	126,6	-0,5	394,4	-0,2

In the manufacturing sector and in trade, this figure has tendency to increase, although not significantly. Perhaps a migration of personnel from one sphere of activity to another is taking place. Positive trend in total wage costs, which can be traced in all branches, must be considered in two aspects: on the one hand, costs may rise due to the direct increase of salary at the enterprise. It is only natural that this indicator should rise, as inflation and the economic situation in the country and in the region can't keep the indicator at the same level. On the other hand, a decrease in personnel numbers and an increase in average salary may indicate the growth of qualitative indicators of human capital.

The relatively high share of personnel costs in total costs of an enterprise is dominated by agriculture and accounts for 27,9 %, in the industry, it ranges from 11,7 % up to 21,7 %. In trade, the figure is the lowest – 3,8 % (table 5).

Table 5. The dynamics of total costs and wage costs by industry.

years	The magnitude of total costs and wage costs of enterprises and economic organizations by types of economic activities, million RUB.									
	agriculture, hunting and forestry		mining		manufacturing		production and distribution of electric energy, gas and water		wholesale and retail trade	
	The total cost	The cost of labor	The total cost	The cost of labor	The total cost	The cost of labor	The total cost	The cost of labor	The total cost	The cost of labor
2005	12 123	3 168	21 234	5 736	353 316	53 176	35 406	4 975	179 468	4 730
2006	13 079	3 644	23 440	6 557	436 875	62 114	39 649	5 977	272 872	7 177
2007	16 049	4 439	29 267	8 011	527 620	75 288	71 285	8 572	362 086	11 865
2008	18 267	5 437	33 338	8 054	664 151	87 879	70 208	11 530	333 245	13 683
2009	18 612	5 485	29 299	7 046	532 975	73 783	137 056	14 160	218 001	12 150
2010	19 713	5 624	34 308	7 326	710 987	84 943	161 524	15 073	319 373	12 881
2011	21 805	6 075	55 080	8 598	892 325	98 573	188 592	16 982	369 756	14 577
2012	22 755	6 399	70 565	10 172	936 868	111 084	202 573	18 753	426 705	17 856
2013	25 531	6 573	77 737	10 891	932 725	115 715	200 745	21 248	516 886	20 759

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The average share for 9 years industry wise, %	100	27,9	100	21,8	100	13,1	100	11,8	100	3,8

Ural region has always been dominated by the manufacturing sector of the economy, production and trade activities. Naturally, the highest indicator of costs is in the industrial sector, namely the manufacturing sector. Since 2009, the cost indicator has increased almost 3 times. The share of wage costs is 12 % of the total costs. Further, there is a relatively high level of costs in the trade sector, which has increased 3 times, if compared with 2009, although the share of costs on labor is only 4 %. Enterprises involved in production and distribution of water, gas and electricity are characterized by the average level of costs, in comparison with all sectors of the economy with the 10 % share of salary.

Mining and agriculture have the lowest costs, if compared to other sectors of the economy, however, the proportion of wage costs is the highest (21,7 % and 27,9 %, respectively). This is due to the specificity of the industry. In agriculture, dominated by human labor, and given the fact that agriculture is just starting to get out of the crisis, the investments are just beginning to come to this industry. Moreover, the low number of enterprises and business activity in this sector of the economy in the Ural region could be due to difficult climate and specific economic characteristics. When mining, costs are large mainly at the development stage of the field. For trade, a low share of labor cost indicates that human labor is used in the industry only at the stage of sale of finished products, i.e., all costs are borne by production companies. Moreover, innovative methods and technologies allow manufacturing companies to use more advanced methods in the process, thus reducing wage costs.

It is of an interest to compare the rate of change of the economically active population with the rate of change of wage costs (table 6).

Table 6. The rate of change of wage costs and employment in the region's economy sector by industry, %.

year	agriculture		mining		manufacturing		production and distribution of electricity, gas and water		trade	
	Types of changes									
	the number	salary	the number	salary	the number	salary	the number	salary	the number	salary
2009										
2010	-2,1	2,5	-6,3	4,0	-0,3	15,1	7,4	6,4	1,8	6,0
2011	-1,1	8,0	-0,9	17,4	-1,0	16,0	0,0	12,7	-0,7	13,2
2012	-3,4	5,3	1,2	18,3	-0,8	12,7	-0,1	10,4	-0,5	22,5
2013	-3,5	2,7	-1,4	7,1	-1,1	4,2	-0,1	13,3	-0,2	16,3

The data in the table allow us to conclude that the trend of reducing the total cost of the enterprise is due to a lower number, not because of a lower salary. That can attest to the fact that businesses optimize their costs to a greater degree not by reducing the level of salary, but by automation and intellectualization of labor processes.

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6. Conclusions

On the basis of the conducted research, we can draw the following conclusions.

The present study has investigated the indicators characterizing the interconnection between salary and basic economic parameters of activity of the enterprises of Ural Federal District in dynamics for 7 years, including the years covered by the crisis situation. Despite the supposed challenges of the crisis period, which were to lead to lower levels of salary, we identified a positive trend both in resources of labor supply of enterprises and in the income growth.

A positive trend in total personnel costs, which can be traced across all industries, need to be considered in two aspects: on the one hand, costs may rise due to the direct salary increase. It is natural that this indicator should rise, as inflation and the economic situation in the country and the region cannot keep it at the same level. On the other hand, an increase of average salary and a simultaneous reduction of personnel may point to improving of quality indicators of human capital, which allows increasing the competitiveness of individual companies and of the region as a whole.

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